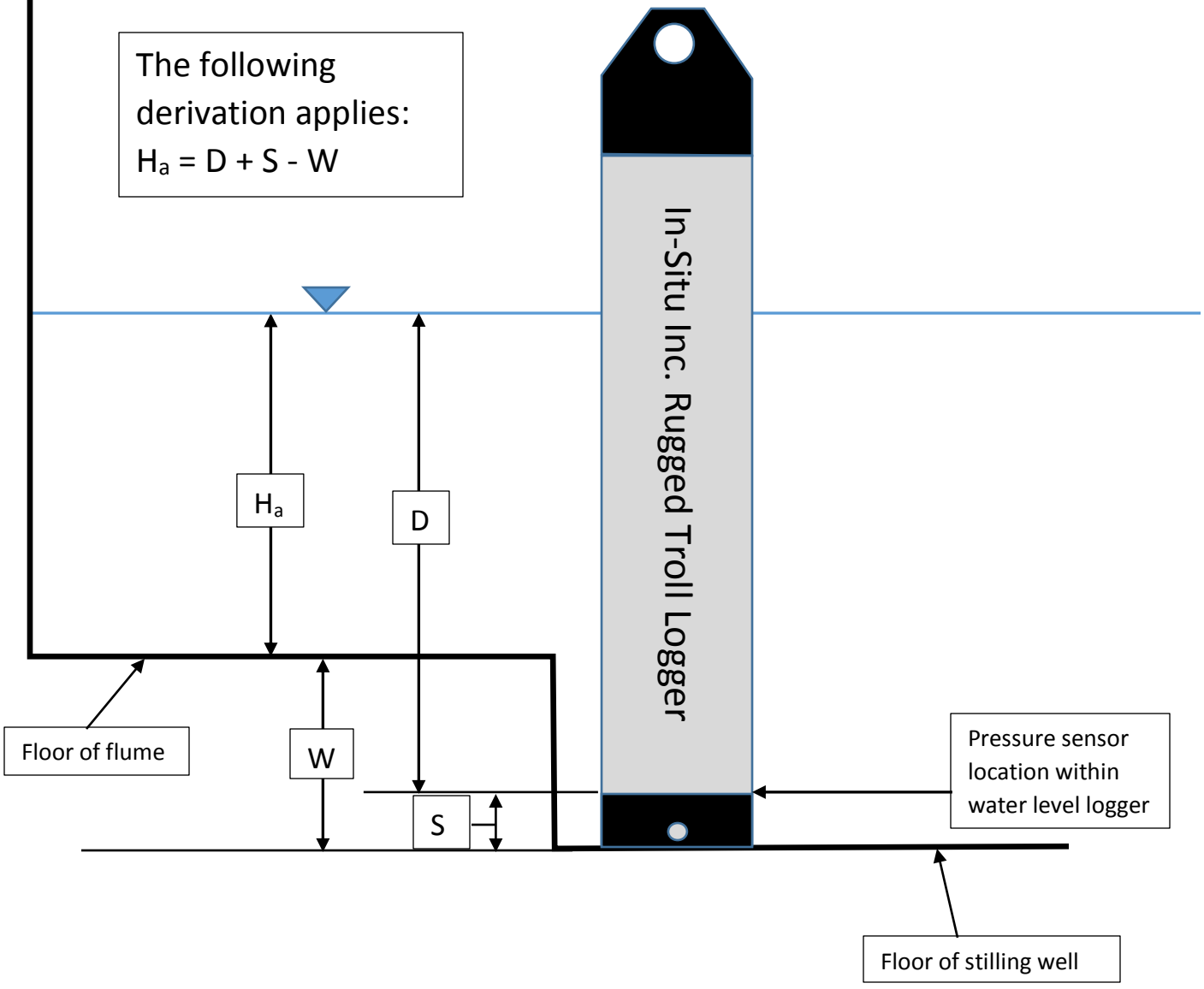
H_a is the height of water at a specific measuring point within a flume that is the required input to calculate the flow through the flume. Water level loggers installed into stilling/probe wells attached to flumes do not typically measure H_a directly. The logger records D, the height of water above the pressure sensor (in the case of absolute or non-vented loggers like the In-Situ Inc. Rugged Troll 100 or 200, D + atmospheric pressure is recorded and atmospheric pressure must be deducted – In Situ provides instruments – Baro Trolls - and software – Baro Merge - to complete the deduction). S is the distance from the flat end of the nose cone to the pressure sensor within the logger. In the case of Rugged Trolls 100/200, S = 0.375 inches. W is the depth of the stilling/probe well sump below the floor of the flume at the H_a measuring point. Note that the logger is vertical with the nose cone touching the floor of the stilling/probe well in this example.



Derivation of H_a Using In-Situ Inc. Rugged Troll 100/200 Water Level Loggers Installed into Stilling/Probe Wells Attached to Parshall or other Types of Flumes